Longitudinal Damping

- Injection damping
  - Improving injection
  - Commissioning the damper
- Instability damping
  - Passive damping [Landau cavities]
  - Bunch-shape damping
  - Coupled-bunch mode damping

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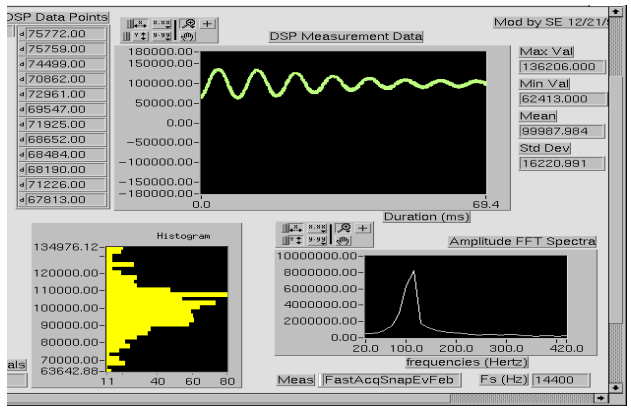
Injection

- Design spec was 700 V kicker
  - Based on 0.2 eVs and 10^{-4} delta P
  - Damping in 10 synchrotron periods
- Installed 4000 V kicker, but
  - Emittance ~ 0.5 eVs
  - Delta P ~ 4 x 10^{-4}
- Must improve injection errors
  - Synchro
    - DC extraction bumps
    - 2-frequency synchro (h=4,12)
    - Smoother frequency steps for cogging
  - Fix delta p with correction signal to spill servo
- Needs beam time for commissioning



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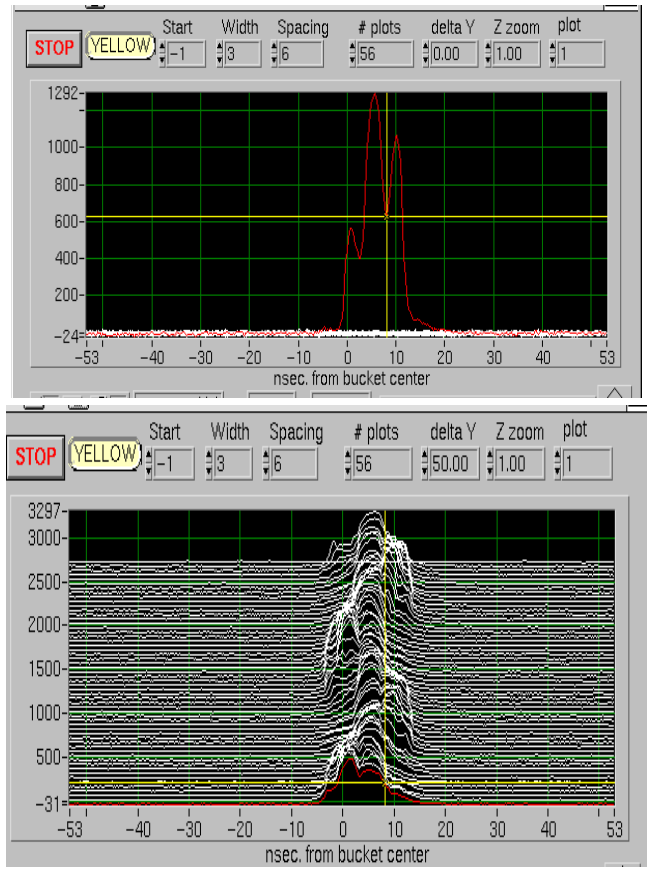
Instability Damping

- Passive damping with Landau cavities
- Adding new hardware to do bunch-shape damping
- Some coupled-bunch modes can be damped through the acceleration cavities (bunch-by-bunch phase data exists)



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